Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC

In the Matter of	)	
	)	
Review of the Commission's Rules	)	WT Docket No. 17-200
Governing the 896-901/935-940 MHz Band	)	

COMMENTS OF UNITED PARCEL SERVICE, INC.

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SUMMARY

United Parcel Service, Inc. ("UPS"), by its attorneys, hereby provides comments in response to the Commission's Notice of Proposed Rulemaking ("*NPRM*") in the above-captioned proceeding. As a global leader in logistics, UPS operates from approximately 7,900 distinct retail and operations facilities. UPS has for many years relied, and continues to rely, on narrowband private land mobile radio ("PLMR") systems licensed to it in the 896-901/935-940 MHz band (the "900 MHz Band") to support mission-critical business communications and applications in many of its facilities. The 900 MHz systems operated by UPS are integral to the efficient and safe operation of its package delivery business. An obligation to protect narrowband operations, both existing and future, must be clearly articulated in any new rules the Commission adopts for broadband services in the 900 MHz Band.

UPS generally supports the Commission's tentative proposal to reconfigure the 900 MHz band to add a broadband service – Private Enterprise Broadband ("PEBB") service – *provided that* narrowband operators are adequately accommodated and protected from harmful interference. Configuring the 900 MHz Band into a 3/3 megahertz broadband segment on a county-by-county or smaller basis while conserving paired 1.5 and 0.5 megahertz blocks for narrowband, site-based licensing and operations may be sufficient as long as certain additional safeguards unequivocally protecting narrowband operations are incorporated into the rules. Further, in order to promote the most efficient and intensive use of the 900 MHz Band, the Commission should allow PEBB licensees to lease or otherwise disaggregate or partition their licensed spectrum to narrowband incumbents through secondary market transactions. Finally, UPS notes that introduction of PEBB in the 900 MHz Band, while not supplanting the need for company-managed operations, could have some benefit as a complement to narrowband

operations for itself and other enterprise users provided that broadband entrants can meet the high service level requirements of B/ILT") narrowband users like UPS.

The 900 MHz Band has long served an important and particular role to meet the communications needs of B/ILT-eligible enterprises. Any new framework introducing broadband operations in the Band should consistently further the purpose of supporting the needs of B/ILT-eligibles and the critical missions they serve. It should not create, even on an ancillary basis, another retail commercial mobile broadband band opportunity focused on servicing the public at large.

UPS agrees with the Commission's proposal that the 900 MHz Band realignment should start with a flexible, voluntary negotiation process between prospective broadband licensees and incumbent narrowband licensees. The Commission should provide maximum flexibility to facilitate these voluntary negotiations between incoming broadband licensees and narrowband incumbents. This voluntary process should be fostered for up to one year. UPS also concurs in the Commission's proposed eligibility conditions for new 900 MHz broadband licenses and the definition of "covered incumbent licensee."

Finally, if a mandatory relocation or an auction process becomes necessary, the process must provide for coverage of all incumbent costs to relocate to comparable facilities, which will include far more than retuning radios. Further, the Commission must allow sufficient time for any mandatory relocation—at least 30 months—because of the extensive planning and engineering activities necessary. Many B/ILT narrowband licensees may have cyclical down times that need to be respected during which relocation work is not possible. UPS, for example, has a "peak freeze" window during the holiday months when the company strictly limits changes to its technology systems.

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United Parcel Service, Inc. ("UPS"), by its attorneys, hereby provides comments in response to the Commission's Notice of Proposed Rulemaking ("*NPRM*") in the above-captioned proceeding.[1] As a global leader in logistics, UPS operates from approximately 7,900 distinct retail and operations facilities. UPS has for many years relied, and continues to rely, on narrowband private land mobile radio ("PLMR") systems licensed to it in the 896-901/935-940 MHz band (the "900 MHz Band") to support mission-critical business communications and applications in many of its facilities. These company-operated-and-controlled 900 MHz Band narrowband facilities and communications will continue to be critical for UPS well into the future. Thus, while the *NPRM* considers whether "to open the 900 MHz band for additional uses that will facilitate increased efficiency and encourage innovation," the Commission is right to commit to strike the right balance and "continu[e] to accommodate narrowband incumbents" in any band realignment.[2]

Further, while the 900 MHz Band remains critical for serving the needs of existing Business/Industrial/Land Transportation ("B/ILT") licensees, any broadband services introduced

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1 *Review of the Commission's Rules Governing the 896-901/935-940 MHz Band*, WT Docket No. 17-200, Notice of Proposed Rulemaking, FCC 19-18 (Mar. 14, 2019) ("*NPRM*").

2 *See id.*, ¶ 11.

into the Band through a new framework should be directed toward the same purpose. To that end, any new broadband services offered must be available only to B/ILT-eligible enterprises.

I. INTRODUCTION

UPS is a global leader in logistics, offering a broad range of solutions including the transportation of packages and freight, the facilitation of international trade, and the deployment of advanced technologies to manage the world of business more efficiently. Headquartered in Atlanta, Georgia, UPS has more than 481,000 employees (approximately 399,000 in the United States) and serves more than 220 countries and territories worldwide, including every address in North America and Europe.

There can be little doubt that UPS's delivery services are critical to American business, industry, and government.[3] UPS delivers an average of 20.7 million packages and documents daily, carrying approximately six percent of the U.S. gross domestic product and two percent of global GDP in its trucks and airplanes to every corner of the globe. By most measures UPS operates one of the ten largest airlines in the world. UPS's rapid, efficient, and reliable air cargo and express service is a critical element of the national and international infrastructure for commerce, and the nation's economic strength.

To provide its essential services, UPS operates from approximately 7,900 distinct retail and operations facilities. UPS relies on its own PLMR facilities to provide mission-critical

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[3] *See* National Infrastructure Protection Plan, Postal and Shipping Sector, *available at* https://www.dhs.gov/xlibrary/assets/nipp_postal.pdf (discussing the Postal and Shipping Sector as one of the 17 identified critical infrastructure and key resources pursuant to the Homeland Security Presidential Directive 7); Department of Homeland Security, National Critical Functions Set, *available at* https://www.dhs.gov/cisa/national-critical-functions-set (including transportation of cargo and passengers by air, rail, road and vessel); see also *See* 47 C.F.R. § 90.7 (definition of "critical infrastructure industry").

business communications and applications. UPS is currently licensed to operate multi-channel trunked radio systems on 900 MHz B/ILT channels at nine of its most critical hub facilities: Louisville, Kentucky; Chicago, Illinois; Memphis, Tennessee; Rockford, Illinois; Columbia, South Carolina; Anchorage, Alaska; Columbus, Ohio; Atlanta, Georgia; and Lexington, Kentucky.

With a total capital investment exceeding $20 million, these 900 MHz trunked radio systems provide mission-critical push-to-talk voice communications. UPS relies on these systems to support reliable, time-critical communications related to employee health and safety; hazardous materials response; aircraft fueling; aircraft deicing; aircraft weight and balance; severe weather notification (e.g., "ramp bans," when employees are evacuated from aircraft ramp areas when lightning is present); plant maintenance; Customs compliance; Transportation Security Administration compliance; internal security; site escorts for local police, fire and ambulance services; and numerous other important business functions.

The 900 MHz systems operated by UPS are integral to the efficient and safe operation of its package delivery business. Consequently, UPS could be directly affected by any significant changes to the Commission's 900 MHz Band rules that limits access to the 900 MHz Band for narrowband operations from what exists today, such as those prospective changes discussed in the *NPRM*. UPS has been an active participant in previous proceedings regarding this Band,[4] and it welcomes the opportunity to comment in the instant proceeding.

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[4] *See* UPS Comments on Notice of Inquiry (Oct. 2, 2017); UPS Comments, WT Docket No. 05-62 (May 18, 2005).

II. THE 900 MHZ BAND IS AND WILL REMAIN A KEY B/ILT BAND AND THE IMPORTANCE OF ACCESS FOR NARROWBAND LICENSEES WILL NOT DIMINISH FOR THE FORESEEABLE FUTURE

In the *NPRM*, the Commission recognizes "the public interest benefit, particularly in the 900 MHz band, of a realignment that maintains access to sufficient narrowband spectrum for PLMR services."[5] To that end, it is essential that the Commission, as it proposes, "make broadband licensees responsible for preventing harmful interference to narrowband operations and for resolving any interference in the shortest time practicable."[6] UPS shares the Commission's goal of protecting narrowband PLMR services in the 900 MHz Band while recognizing the prospective benefits that might come from a new framework that supports the introduction of broadband services in the Band. An obligation to protect narrowband operations, both existing and future, must be clearly articulated in any new rules the Commission adopts for broadband services in the 900 MHz Band. With regard to narrowband incumbents, whether operating in the broadband segment or elsewhere in the Band, the obligation for protection by broadband operators must continue beyond any transition period.[7]

Finally, any new regulatory framework should not limit narrowband operations to existing geographic locations. Rather, the Commission's Rules should enable growth and innovation by narrowband licensees, including the ability to seek licenses at new locations,

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5 *NPRM*, ¶ 26.

6 *Id*., ¶ 73.

7 *See id.*, Appendix A Proposed Rule 27.1503(g) (proposing that a broadband licensee's application must include "(4) a description of how the applicant will provide interference protection to, and/or relocate from the broadband segment, all covered incumbents.") UPS, as discussed below, recognizes that broadband applicants may reach a negotiated relocation of incumbent narrowband operators to new frequencies. But where such negotiations fail, the narrowband incumbent must be entitled to protection from broadband operators as long as it continues to operate in the 900 MHz Band.

including through modifications of existing licenses or entirely new applications. UPS is likely to open new facilities in new cities and towns in the future and must have 900 MHz Band narrowband spectrum available to complement its existing operations and meet its critical communications needs as it grows.

III. PROVIDED THAT THE NATURE OF THE 900 MHZ BAND IS PRESERVED TO PROMOTE B/ILT-ELIGIBLE NEEDS, UPS GENERALLY SUPPORTS THE COMMISSION'S PROPOSAL FOR A 3/3 MEGAHERTZ PEBB SERVICE IN THE BAND

UPS generally supports the Commission's tentative proposal to reconfigure the 900 MHz Band to add a broadband service – Private Enterprise Broadband ("PEBB") service – *provided that* narrowband operators are adequately accommodated and protected from harmful interference.[8] Configuring the 900 MHz Band into a 3/3 megahertz broadband segment on a county-by-county or smaller basis while conserving paired 1.5 and 0.5 megahertz blocks for narrowband, site-based licensing and operations may be sufficient as long as certain additional safeguards protecting narrowband operations are set forth in the rules. As noted earlier, the Commission should ensure that the rules unequivocally require PEBB licensees to protect narrowband licensees, in both PEBB licensed and adjacent areas, under all circumstances, both during any transition and during subsequent PEBB operations in the Band.

Further, in order to promote the most efficient and intensive use of the 900 MHz Band, the Commission should allow PEBB licensees to lease or otherwise disaggregate or partition their licensed spectrum to narrowband incumbents through secondary market transactions.

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[8] *See NPRM*, ¶ 9 (proposing "to realign the 900 MHz band to create a broadband segment and to reserve the remainder of the 900 MHz band for continued narrowband operations" to "improv[e] the efficiency of spectrum use"). *See also id.* ¶ 11 (proposing "to open the 900 MHz band for additional uses that will facilitate increased efficiency and encourage innovation, while continuing to accommodate narrowband incumbents").

Finally, UPS notes that introduction of PEBB in the 900 MHz Band could have some benefit as a complement to narrowband operations for itself and other enterprise users provided that broadband entrants can meet the high service level requirements. However, UPS harbors no expectations that PEBB could supplant the need for its company-operated-and-controlled operations necessary to meet the exacting requirements of its air cargo and delivery services.

A. UPS Generally Supports the Commission's Proposal to Preserve Paired Sub-Bands of 1.5 and 0.5 Megahertz for Narrowband Operations

UPS urges the Commission to ensure that at least a total of four megahertz, i.e., paired sub-bands of 1.5 megahertz each and two 0.5 megahertz sub-bands – are reserved for narrowband licenses, as proposed in the *NPRM*.[9] The Commission should decline to preserve anything less, absent a compelling showing in a given PEBB license area by a licensee that it can utilize a portion of the narrowband spectrum for PEBB operations without causing any harmful interference to any narrowband incumbent or applicant and that sufficient room for narrowband growth in the licensed area remains. The possibility raised in the *NPRM* of transitioning the 1.5/1.5 megahertz segment to a 1.4/1.4 megahertz LTE channel at some later date is premature and unwarranted at this time.[10] Similarly, the Commission should reject the alternative realignment proposal to create a 5/5 megahertz broadband channel.[11] If, down the road, a PEBB licensee in a particular area can demonstrate that use of all 5 megahertz would not cause any harmful interference to any narrowband incumbent in the area and adjacent geographic areas, the Commission might consider case-by-case exceptions. But this need not be decided at the outset.

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9 Specifically 896-897.5/935-936.5 MHz and 900.5-901.0/939.5-940.0 MHz for narrowband. *See NPRM*, ¶ 15.

10 *See NPRM*, ¶ 16.

11 *See id.*, ¶ 20.

Were a PEBB licensee to seek to operate beyond the principal 3/3 megahertz PEBB bandwidth, the PEBB should be secondary in the narrowband portions of the Band and be required to coordinate with any current or future narrowband operations occupying the narrowband portion. Absent such protections, the regulatory framework would fall short the Commission's goal to protect narrowband incumbents.

B. Any PEBB License Areas Should Be No Larger Than Counties and Secondary Market Transactions Should Be Allowed

The Commission seeks comment on issuing PEBB licenses on a county-by-county basis.[12] UPS supports licensing on a county-by-county or smaller geographic area basis (e.g., census tracts). To increase the chances that the spectrum is intensively used, and to provide increased opportunities for narrowband licensees, PEBB licensees should expressly be allowed to lease, disaggregate and partition licenses to engage in secondary market transactions with B/ILT eligibles for use of the spectrum. This flexibility could be appealing to existing PLMR licensees like UPS in particular geographic areas where narrowband use is already or in the future becomes heavy.[13] County-by-county licensing, or smaller license areas, would tend to make such secondary, spectrum-efficiency-maximizing transactions more practical than large license areas, where an entity's narrowband needs might only cover a very small portion of the spectrum license area. Smaller license-areas also would tend to foster more competitive bidding for licenses.

Narrowband licensees may want to lease spectrum beyond the narrowband segment in particular areas in order to service a particularly large facility or certain operations. In such case,

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12 *See id.*, ¶ 22.

13 *See infra* Section III.C.

if the circumstances are advantageous to both the PEBB licensee and the narrowband licensee, the parties should be permitted to engage in secondary market transactions to lease the entire broadband channel, or some disaggregated part of the spectrum or partitioned geographic area. Such secondary market transactions should not change the broadband segment licensee's performance, construction and renewal requirements, although the licensee should be able to draw upon the secondary user's operations to help meet those requirements, so as to encourage such transactions.

To effectuate this, the Commission should add the Part 27 900 MHz Broadband Service to Section 1.9005 of its rules as subject to the spectrum leasing policies and apply the rules of Subpart X (Spectrum Leasing) to any 900 MHz Band PEBB service. In addition, the Part 27 900 MHz Broadband Service should be included in the definition of "Covered Geographic Licenses" in Section 1.907 of the Commission's rules and be subject to the Commission's geographic partitioning and spectrum disaggregation rule.[14]

C. PEBB Service Might Be a Useful Complement to Narrowband Service

The Commission also seeks comment on the extent to which the proposed PEBB service might benefit current narrowband users by helping them to meet their broadband needs.[15] UPS is a heavy user of commercial LTE services throughout many parts of its business, but for mission-critical communications at many of its larger facilities, no existing LTE service provider to date has been willing or able to guarantee contractually the service levels UPS requires with respect to systems throughput, capacity, availability, scheduling of downtime windows or timeline for

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14 *See* 47 C.F.R. § 1.950.

15 *NPRM*, ¶ 18.

discontinuance of specific services or capabilities. For example, UPS's most time-critical operations typically occur between midnight and 5:00 a.m., when our UPS Next Day Air® shipments are sorted at our key hub facilities. Unfortunately, this also tends to be the typical down window time for consumer-focused mobile network operators to take down local towers as they implement changes. UPS, as a customer of commercially-provided wireless services, has also experienced critical outages as a result of carriers' shutdown of legacy wireless services many months earlier than "promised." For reasons such as these, UPS continues to rely upon its own narrowband licenses and private trunked radio systems that it owns and controls.

Nevertheless, UPS would be interested in considering truly enterprise-focused PEBB services in the 900 MHz Band that can meet the service levels it requires as a complement to its existing operations. For example, today, UPS's trunked radio systems are deployed to provide coverage within the geographic boundaries of its facilities. However, there are times when it would be advantageous for terminals on UPS's private trunked radio networks to have the ability to "roam" onto a wide-area commercial network, extending the potential value of the user equipment. UPS believes the PEBB concept offers an intriguing opportunity for the potential development of dual-mode devices and related services to provide exactly this kind of supplemental capability.

D. The Commission Should Require Prospective PEBB Licensees to Prevent Harmful Interference to 900 MHz Incumbent Operations

As noted above, the Commission states in the *NPRM*, "[w]e propose to make broadband licensees responsible for preventing harmful interference to narrowband operations and for

resolving *any* interference in the shortest time practicable."[16] UPS agrees that the rules should ensure compatibility of PEBB operations with narrowband operations. The Commission should ensure that similar specific language in Part 27, Subpart P of the rules requires PEBB licensees to protect narrowband incumbents generally and without time limits, whether before and during the transition in a given area to PEBB operations or during PEBB operations in the band.

In order to protect incumbent narrowband licensees, the Commission should establish, at a minimum, the following in its rules:

- an objective, easily measurable interference protection criterion that PEBB licenses must meet;
- co-channel, adjacent channel and near-adjacent channel separation criteria; and
- an emissions mask for PEBB transmissions.

UPS continues to examine whether other protection measures and mitigation methods will be required to ensure compatibility.

IV. ANY NEW BROADBAND SYSTEMS SHOULD BE USED ONLY TO OFFER SERVICES FOR B/ILT-ELIGIBLE ENTERPRISES

Any broadband licensing framework into the 900 MHz Band should consistently further the purpose of the Band to support the needs of B/ILT-eligibles and the critical missions they serve. It should not create, even on an ancillary basis, nor be permitted to devolve into, another retail commercial mobile broadband band opportunity focused on servicing the public at large. There are many bands dedicated to standard consumer-focused commercial mobile broadband services and the Commission continues to auction additional spectrum for such services,

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16 *NPRM*, ¶ 73 (emphasis added).

including 4G and 5G.[17] However, the 900 MHz Band serves an important and particular role to meet the communications needs of B/ILT-eligible enterprises (land transportation, utility, manufacturing, logistics and petrochemical companies). The Commission should not enable the PEBB service in such a way that could be used to undermine that purpose. In other words, PEBB licensees should not be incented inappropriately to deploy a commercial broadband service in the 900 MHz Band with a possible eye toward selling it to the commercial wireless carriers. Such an outcome would disserve the needs of B/ILT-eligibles in the Band. For similar reasons, the entities and activities eligible for B/ILT licenses in Part 90, Subpart C should not be expanded and should remain limited to commercial and other related or similar uses.[18]

The Commission and the parties that commented on the *Notice of Inquiry* in this proceeding support the principle that the 900 MHz Band should continue to focus on serving the needs of B/ILT eligible entities. In the *NPRM*, the Commission notes that "most commenters . . . recognize that broadband is an effective tool for addressing the current and future communications needs of a wide range of the *900 MHz band users*, and they agree that a broadband service *targeted to B/ILT entities* could provide the coverage and reliability that electric and other utilities require but cannot obtain from consumer-oriented commercial wireless carriers."[19] The Commission also generally recognizes the importance of wireless broadband "for large and small businesses."[20] It envisions that "realigning the 900 MHz band will create opportunities for robust broadband networks that fully *support critical communication systems*

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17 *See e.g.*, *Use of Spectrum Bands Above 24 GHz for Mobile Radio Services*, GN Docket No. 14-177; *Promoting Investment in the 3550-3700 MHz Band*, GN Docket No. 17-258; *Expanding Flexible Use of the 3.7-4.2 GHz Band*, GN Docket No. 18-122.

18 *See* 47 C.F.R. §§ 90.31 *et seq*.

19 *NPRM*, ¶ 5 (emphasis added).

20 *Id.*, ¶ 7.

and that ensure the low latency and ultra-high reliability required by electric and other utilities, as well as other B/ILT and SMR spectrum users."[21] The Commission must not lose sight of the continuing purpose of the 900 MHz Band and should allow PEBB licensees in the Band to serve only B/ILT eligible entities.

V. THE TRANSITION OF INCUMBENTS TO MAKE WAY FOR PEBB LICENSEES SHOULD BE HANDLED PRIMARILY THROUGH FLEXIBLE VOLUNTARY NEGOTIATIONS

Although it considers multiple methods to transition to the new 900 MHz Band alignment in the *NPRM*, the Commission proposes to first conduct a market-driven, voluntary exchange process.[22] UPS agrees that a voluntary process would be the fastest and most efficient approach, but it must be conducted with maximum flexibility for the parties.

The Commission's proposed conditions for an entity to be eligible for a new 900 MHz broadband license are appropriate.[23] In addition, the Commission proposes a suitable definition of "covered incumbent licensee" in the *NPRM* and proposed Section 27.1503(d) of the rules.[24] The definition should be applied to both current site-based licensees and entities that are eligible for and obtain 900 MHz Band site-based licenses in the future.

Further, the incumbents to be eligible for relocation through the voluntary process and/or protection should not be limited to "co-channel" operations.[25] Rather, geographically proximate narrowband operations – and adjacent (and near-adjacent) channel narrowband licensees should also be relocated and/or protected to the extent warranted. PEBB licensees should be responsible

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21 *Id.*, ¶ 8 (emphasis added).

22 *See NPRM*, ¶ 25.

23 *See id.*, ¶ 29.

24 *See id.*, ¶ 32.

25 *See id.*, ¶33.

for relocation and/or protection of any narrowband licensees that would receive harmful interference from the PEBB licensee whether they are in the PEBB's licensed county or nearby, or in the same, adjacent or near-adjacent channels. As an added measure of flexibility to ensure voluntary negotiations are as effective as they can be, the Commission should encourage PEBB licensees and applicants to negotiate as appropriate with PEBB licensees in other counties to share relocation and/or protection costs of narrowband operations that span more than one county.

Moreover, the Commission should provide maximum flexibility to facilitate these voluntary negotiations between incoming broadband licensees and narrowband incumbents. UPS appreciates that the Commission proposes to allow prospective broadband licensees and covered incumbents to agree to relocate the incumbent to less spectrum than it currently holds and include other consideration such as monetary payments.[26] Flexibility to negotiate such monetary payments or other consideration will be important to transition the 900 MHz Band through voluntary negotiation.

The Commission, however, proposes to restrict the incumbent's new spectrum to an amount not to exceed its current spectrum holdings "in the county, except where doing so is necessary to achieve equivalent coverage and/or capacity."[27] It is possible that an incoming broadband licensee and a particular covered incumbent could propose to operate in multiple counties and it could be in both parties' interest for the incumbent to give up some spectrum in

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26 *See NPRM*, ¶ 36. The Commission also proposes that such other consideration may include "costs of relocation" but the prospective broadband licensee should already be covering all relocation costs to comparable facilities in terms of coverage and capacity under all circumstances. *See infra* Section VI.

27 *Id.*, ¶ 36.

one county for more in another. Such voluntary arrangements, which may involve multiple PEBB licensees or applicants, should be permitted if that is what it takes to strike a deal, even if the result is greater spectrum holdings and coverage or capacity for the incumbent in a particular county than it currently has.

Finally, prospective broadband licensees and covered incumbents should be permitted to negotiate on a voluntary basis for up to one year from when the request to negotiate is first made by either party, after which the parties enter into a dispute resolution process, e.g., a Commission-guided negotiation or a mediation process. Even with a one year voluntary negotiation period, followed by dispute resolution if necessary, the rebanding is likely to be completed faster and more efficiently than through an auction process.

VI. SHOULD THE VOLUNTARY NEGOTIATIONS FAIL AND IT BECOME NECESSARY TO CONDUCT MANDATORY RELOCATION OR OTHER INVOLUNTARY REBANDING, THE PROCESS SHOULD COVER ALL INCUMBENT RELOCATION COSTS TO PROVIDE OBJECTIVELY COMPARABLE FACILITIES

UPS agrees with the Commission's proposal that the 900 MHz Band realignment should start with a flexible, voluntary negotiation process between prospective broadband licensees and incumbent narrowband licensees,[28] and ideally that process will be sufficient. However, it is possible, as the Commission acknowledges, that a mandatory relocation or auction process may become necessary as a back-up when voluntary negotiations fail, at least in some areas.[29] The Commission seeks comment on whether, in such cases, to reimburse incumbent costs and about

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28 *See NPRM*, ¶ 25.

29 *See id.*, ¶ 38.

their magnitude.[30] Such costs to ensure comparable facilities in terms of capacity and coverage should be reimbursed. In any involuntary 900 MHz Band reconfiguration, the process must cover **all** costs to relocate incumbents to new 900 MHz Band spectrum, which UPS submits will typically include far more than retuning radios.

In that vein, UPS feels compelled to respond to the *NPRM*'s assertion that "these costs may be relatively low given that equipment is interoperable across the entire band and would therefore only require incumbents to retune their existing radio equipment."[31] Incumbent relocation and protection costs will likely be significant. UPS's total capital investment in its 900 MHz trunked radio systems exceeds $20 million. In addition to retuning the radios, narrowband licensees like UPS would need to tune other equipment like combiners and filters.

Moreover, incumbent costs will likely include much more than retuning of equipment, including substantial coordination activities, potential implementation of interference mitigation measures to protect other incumbents or to protect the relocated incumbent, re-siting of facilities in many cases, repositioning of facilities on an antenna structure, and other costs associated when there is an inability to flash cutover or shut down any operations for any period of time to transition due to the nature of the business operations being supported.

UPS's 900 MHz radio systems are in use at some of the company's busiest and most critical locations. For just the first four months of 2019, and including data for only eight of UPS's nine sites where licensed systems are in operation (and excluding the busiest), its systems

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30 *See id.*, ¶ 50.

31 *Id.*

saw over 19 million push-to-talk transmissions for approximately 1.2 million minutes of use.[32] During UPS's peak season (from late November to early January), system usage is considerably higher.

Many of these 900 MHz systems are in use 24 hours a day, every day of the year. While there may be periods of six to eight hours when there are no active package sorting operations, these timeframes correspond to UPS peak activity periods for other activities that rely on narrowband communications, including heavy aircraft maintenance, ground vehicle maintenance, training, and repairs to conveyor belts and sortation equipment. As a result, there is never a down window when the radio system can be taken offline completely without having a backup in place or creating a significant operational impact.

Since there are no available down times, an extremely carefully coordinated plan must be developed and executed in order to make even the smallest change to these systems. Every such change UPS has made in the past has required extensive coordination across dozens of departments, with a direct cost of thousands of internal labor hours. UPS must plan for such significant labor costs in its annual budgets. It cannot simply implement these kinds of labor-intensive changes on an *ad hoc* basis.

Every one of UPS's 900 MHz systems has channels that would be impacted by the proposed realignment of the band.[33] The site where UPS's licensed narrowband operations

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32 The one site for which data is not included here is UPS's busiest ground hub in the country, which is near Chicago. UPS does not have data for that site because adding the data collection capability would require an upgrade that it has chosen not to deploy due to the complexity and risk of operational impact.

33 This includes eight channels at its Louisville, Kentucky site; six channels at its Rockford, Illinois site; five channels at its Chicago, Illinois site; four channels at its Memphis, Tennessee site; 11 channels at its Columbia, South Carolina site; four channels at its

appears to be simplest, Columbus, Ohio, where UPS has four channels on a single combiner, only one of which would require retuning, has complications even when only the retuning activity is considered. Although the radios at that facility have the capability of being reprogrammed over the air ("OTA"), a new combiner would need to be custom tuned for the new frequency configuration and lab tested in advance. On the day of the cutover, the impacted repeater and all the handheld and mobile radios could be reprogrammed over several hours while the new combiner is swapped into place.

Unfortunately, the retuning process at other sites are all considerably more complex. They involve multiple frequencies on multiple combiners and multiple transmit antennas. Perhaps most importantly, most of UPS's mobile and handheld radios are not OTA reprogrammable. They must be physically located and connected by cable to a computer for reprogramming. At a site like UPS's Worldport Hub in Louisville, this requires physically touching more than 2,000 handheld radios throughout the 5.2 million square foot facility and more than 200 mobile units distributed across more than 300 acres of ramp space. This is an exceedingly difficult task that cannot be completed in even several days, much less a brief down window of a few hours.

It bears repeating that the retuning activity is only one aspect of what must occur before a relocation can be implemented. In UPS's view, most of the 900 MHz narrowband systems at its sites are going to require a significant stockpile of new radios to be pre-programmed with the new frequency plans in advance of any transition, so that the new radios can be handed out on the day of a transition. This still leaves the complexity of coordinating the swapping out of

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Anchorage, Alaska site; one channel at its Columbus, Ohio site; three channels at its Lexington, Kentucky site; and nine channels at its Atlanta, Georgia site.

mobile radios. Where possible, one option that might ease the transition would be to phase in new frequencies and run old and new channels in parallel for some time. But this brings added complications and costs, such as added space and cooling requirements, new repeaters, new antennas, new combiners, and new feeds for in-building distributed antenna systems.

The 900 MHz narrowband communications systems are critical to the enterprises that operate them. In sum, in any involuntary 900 MHz Band reconfiguration, the process must ensure that **all** affected incumbents are entitled to reimbursement of their costs to relocate to new frequencies while ensuring they maintain comparable facilities in terms of coverage and capacity covered, costs which will be significant and will include far more than retuning radios.

VII. THE COMMISSION SHOULD ALLOW SUFFICIENT TIME FOR ANY MANDATORY RELOCATION

As stated in Section V, UPS agrees with the Commission that the 900 MHz Band realignment should start with a flexible, voluntary negotiation process.[34] However, if any mandatory relocation or other involuntary process becomes necessary, apart from ensuring all incumbents' costs are reimbursed related to the relocation to new frequencies while maintaining comparable facilities, the Commission should set a realistic deadline for the transition. The transition process will require staffing planning, budgetary planning, complying with change freeze windows (e.g., during peak season), re-engineering, acquisition of new hardware (combiners, etc.), tuning, testing, swapping or reprogramming of radios and other important processes.

UPS in particular has seasonal challenges during which times a transition becomes more difficult or impossible to implement. For example, attempting to relocate or engage in any

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[34] *See NPRM*, ¶ 25.

substantial reconfiguration activities as identified above before and during the winter holidays when UPS is transporting holiday gifts around the globe would not be possible. UPS strictly limits any changes to its technology systems during this "peak freeze" window.[35] For these reasons, and recognizing the technical and operational complexities described above with respect to retuning, UPS submits that the Commission should allow at least 30 months for any involuntary transition.

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35 In a third quarter 2018 earnings call, UPS Senior VP, President & COO stated with respect to the 2018 holiday period between Black Friday and New Year's Day, "We anticipate delivering nearly 800 million packages during the period. This year, we are preparing to deliver more than 30 million packages on 19 of 21 operating days. We expect to deliver more than 37 million packages worldwide on our peak operating day." United Parcel Service, Inc. NYSE:UPS FQ3 2018 Earnings Call Transcript, *available at* https://www.fool.com/earnings/call-transcripts/2018/10/24/united-parcel-service-inc-ups-q3-2018-earnings-con.aspx.

VIII. CONCLUSION

UPS continues to rely on the critical narrowband PLMR systems licensed to it in the 900 MHz Band to support mission-critical business communications and applications in many of its facilities. These company-operated-and-controlled 900 MHz Band narrowband facilities and communications will continue to be critical for UPS well into the future. Thus, while the *NPRM* considers whether "to open the 900 MHz band for additional uses that will facilitate increased efficiency and encourage innovation," the Commission is right to commit to strike the right balance and "continu[e] to accommodate narrowband incumbents" in any band realignment.

Respectfully submitted,

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